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| <b>TRANSMITTAL<br/>FORM</b><br><br>(to be used for all correspondence after initial filing) | Application Number     | 10/706,645        |
|   | Filing Date            | November 12, 2003 |
|   | First Named Inventor   | Charles R. Rapier |
|   | Art Unit               | *                 |
|   | Examiner Name          | *                 |
| Total Number of Pages in This Submission  | Attorney Docket Number | 1856-42801(40183) |

| ENCLOSURES (check all that apply)   |  |   |
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| <input type="checkbox"/> Fee Transmittal Form<br><br><input type="checkbox"/> Fee Attached<br><br><input type="checkbox"/> Amendment/Reply<br><br><input type="checkbox"/> After Final<br><br><input type="checkbox"/> Affidavits/declaration(s)<br><br><input type="checkbox"/> Extension of Time Request<br><br><input type="checkbox"/> Express Abandonment Request<br><br><input checked="" type="checkbox"/> Information Disclosure Statement<br><br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><br><input type="checkbox"/> Response to Missing Parts/<br>Incomplete Application<br><br><input type="checkbox"/> Response to Missing Parts<br>under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><br><input type="checkbox"/> Licensing-related Papers<br><br><input type="checkbox"/> Petition<br><br><input type="checkbox"/> Petition to Convert to a<br>Provisional Application<br><br><input type="checkbox"/> Power of Attorney, Revocation<br>Change of Correspondence Address<br><br><input type="checkbox"/> Terminal Disclaimer<br><br><input type="checkbox"/> Request for Refund<br><br><input type="checkbox"/> CD, Number of CD(s) | <input type="checkbox"/> After Allowance Communication<br>to Group<br><br><input type="checkbox"/> Appeal Communication to Board<br>of Appeals and Interferences<br><br><input type="checkbox"/> Appeal Communication to Group<br>(Appeal Notice, Brief, Reply Brief)<br><br><input type="checkbox"/> Proprietary Information<br><br><input type="checkbox"/> Status Letter<br><br><input checked="" type="checkbox"/> Other Enclosure(s) (please<br>identify below):<br>Form PTO-1449 (4 p.); THIRTY-<br>NINE (39) Cited References; and<br>acknowledgement postcard |
| Remarks   |  |   |

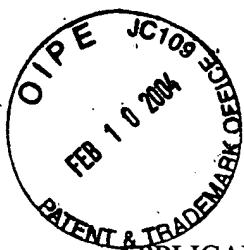
| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |                           |
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| Firm<br>Or<br>Individual Name              | Jeffrey L. Johnson 53,078 |
| Signature                                  |                           |
| Date                                       | February 4, 2004          |

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| Typed or Printed Name  | Sandra K. Begley |      |                  |
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119125.01/1856.42801

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P. O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.**

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|             |   |   |                 |
|-------------|---|---|-----------------|
| APPLICANT:  | Charles R. Rapier et al.                      | § | GROUP ART UNIT: |
|             |   | § |                 |
| SERIAL NO.: | 10/706,645                                    | § |                 |
|             |   | § | EXAMINER:       |
| FILED:      | November 12, 2003                             | § |                 |
|             |   | § |                 |
| FOR:        | Stabilized Alumina Supports, Catalysts Made   | § |                 |
|             | Therefrom, And Their Use In Partial Oxidation | § |                 |

INFORMATION DISCLOSURE STATEMENT

Atty. Dkt. No.: 1856-42801(40183)

Date: February 4, 2004

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

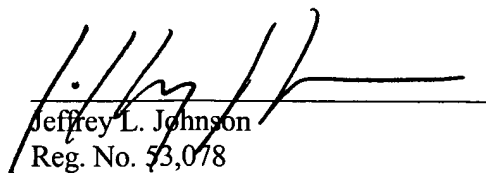
Sir:

This Information Disclosure Statement, including completed Form PTO-1449, comprises a list of pertinent art of which Applicants are aware. If this application was filed prior to June 30, 2003, a copy of each publication listed on Form PTO-1449 is enclosed herewith.

The submission of this Information Disclosure Statement and the references submitted therewith is not an admission that the art cited is "prior" with respect to the present invention, nor is it a representation, that no better art exists. Applicants hereby reserve the right to swear behind or otherwise disprove any alleged "prior" nature of any art cited should the facts support and the situation warrant such an action. It is submitted that the art cited does not constitute a bar to the patentability of Applicants' invention under 35 U.S.C. § 102 or § 103.

As this Information Disclosure Statement is being filed pursuant to 37 C.F.R. § 1.97(b), no certification or fee is required.

Respectfully submitted,



Jeffrey L. Johnson

Reg. No. 53,078

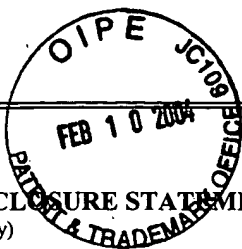
CONLEY ROSE, P.C.

P. O. Box 3267

Houston, Texas 77253-3267

(713) 238-8000

ATTORNEY/AGENT FOR APPLICANT



Form PTO-1449 (Modified)

Atty. Docket No.  
1856-42801 (40183)Serial No.  
10/706,645**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**  
(Use several sheets if necessary)Applicant  
Charles R. Rapier et al.Filing Date  
November 12, 2003

Group

**REFERENCE DESIGNATION U.S. PATENT DOCUMENTS**

| EXAMINER<br>INITIAL |    | DOCUMENT<br>NUMBER | DATE       | NAME                     | CLASS | SUB-<br>CLASS | FILING<br>DATE IF<br>APPROPRIA<br>TE |
|---------------------|----|--------------------|------------|--------------------------|-------|---------------|--------------------------------------|
|                     | AA | 3752775            | 08/14/1973 | <i>Yamaguchi et al.</i>  | 252   | 464           |                                      |
|                     | AB | 4537873            | 08/27/1985 | <i>Kato et al.</i>       | 502   | 242           |                                      |
|                     | AC | 4585752            | 04/29/1986 | <i>Ernest</i>            | 502   | 314           |                                      |
|                     | AD | 4738946            | 04/19/1988 | <i>Yamashita et al.</i>  | 502   | 303           |                                      |
|                     | AE | 4793797            | 12/27/1988 | <i>Kato et al.</i>       | 143   | 7             |                                      |
|                     | AF | 4961786            | 10/09/1990 | <i>Novinson</i>          | 106   | 692           |                                      |
|                     | AG | 5837634            | 11/17/1998 | <i>McLaughlin et al.</i> | 501   | 127           |                                      |
|                     | AH | 6399528            | 06/04/2002 | <i>Krell et al.</i>      | 501   | 80            | 03/05/2001                           |
|                     | AI | 2003/0032554       | 02/13/2003 | <i>Park et al.</i>       | 502   | 302           | 05/13/2002                           |
|                     |    |                    |            |                          |       |               |                                      |

**FOREIGN PATENT DOCUMENTS**

|  |  | DOCUMENT<br>NUMBER | DATE | COUNTRY | CLASS | SUB-<br>CLASS | Translation |    |
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|  |  |                    |      |         |       |               | YES         | NO |
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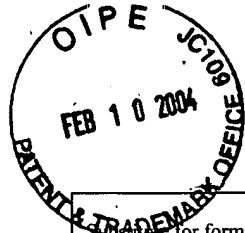
**OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)**

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EXAMINER

DATE CONSIDERED

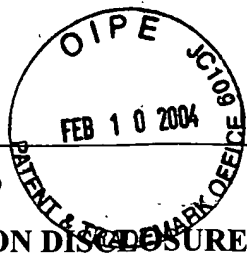
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| SUBSTITUTE for form 1449B/PTO<br><br><b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><br><i>(use as many sheets as necessary)</i> |   |    | <b>Complete if Known</b>    |                               |                   |
|   |   |    | <b>Application Number</b>   | 10/706,645                    |                   |
|   |   |    | <b>Filing Date</b>          | November 12, 2003             |                   |
|   |   |    | <b>First Named Inventor</b> | Charles R. Rapier             |                   |
|   |   |    | <b>Group Art Unit</b>       |                               |                   |
|   |   |    | <b>Examiner Name</b>        |                               |                   |
| <b>Sheet</b>  | 2 | of | 4                           | <b>Attorney Docket Number</b> | 1856-42801(40183) |

| OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS |                       |  |                |
|--|-----------------------|--|----------------|
| Examiner Initials*                                 | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate) title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issued number(s), publisher, city and/or country where published. | T <sup>2</sup> |
|  | AJ                    | Amato et al., <i>Sintering of Pelleted Catalysts for Automotive Emission Control</i> , pp. 187-197   |                |
|  | AK                    | Arai et al., <i>Recent Progress in High-Temperature Catalytic Combustion</i> , Catalysis Today, 10 (1991) pp. 81-94  |                |
|  | AL                    | Arai et al., <i>Thermal Stabilization of Catalyst Supports and their Application to High-Temperature Catalytic Combustion</i> , Applied Catalysis A: General 138 (1996) pp. 161-176  |                |
|  | AM                    | Artizzu-Duart et al, <i>Catalytic Combustion of Methane on Substituted Barium Hexaaluminates</i> , Catalysis Today 59 (2000) pp. 163-177   |                |
|  | AN                    | Beguin et al., <i>Stabilization of Alumina by Addition of Lanthanum</i> , Applied Catalysis 75 (1991) pp. 119-132  |                |
|  | AO                    | Bish et al., <i>Quantitative Phase Analysis Using the Rietveld Method</i> , J. Appl. Cryst. (1998) 21, pp. 86-91   |                |
|  | AP                    | Cai et al., <i>Atomic Scale Mechanism of the Transformation of <math>\gamma</math>-Alumina to <math>\alpha</math>-Alumina</i> , Physical Review Letters, Vol. 89, No. 23, (12/02/2002) pp. 235501-1 – 235501-4   |                |
|  | AQ                    | Chen et al., <i>High Temperature Thermal Stabilization of Alumina Modified by Lanthanum Species</i> , Applied Catalysis A: General 205 (2001) pp. 159-172  |                |
|  | AR                    | Dexpert-Ghys, <i>Optical and Structural Investigation of the Lanthanum <math>\beta</math>-Alumina Phase Doped with Europium</i> , Journal of Solid State Chemistry 19, (1976) pp. 193-204  |                |
|  | AS                    | Farrington et al., <i>The Lanthanide <math>\beta''</math> Alumina</i> , Applied Physics A 32 (1983) pp. 159-161  |                |
|  | AT                    | Groppi et al., <i>Preparation and Characterization of Hexaaluminate-Based Materials for Catalytic Combustion</i> , Applied Catalysis A: General, 104 (1993) pp. 101-108  |                |
|  | AU                    | Jang et al., <i>Catalytic Oxidation of Methane Over Hexaaluminates and Hexaaluminate-Supported Pd Catalysts</i> , Catalysis Today 47 (1999) pp. 103-113  |                |
|  | AV                    | Johansson et al., <i>Development of Hexaaluminate Catalysts for Combustion of Gasified Biomass in Gas Turbines</i> , Journal of Engineering for Gas Turbines and Power, Vol. 124 (04/2002) pp. 235-238   |                |
|  | AW                    | Kato et al., <i>Preparation of Lanthanum <math>\beta</math>-Alumina with High Surface Area by Coprecipitation</i> , Journal of the American Ceramic Society, 70 [7] (07/1987) pp. C-157-159  |                |
|  | AX                    | Levy et al., <i>The Effect of Foreign Ions on the Stability of Activated Alumina</i> , Journal of Catalysis 9 (1967) pp. 76-86   |                |

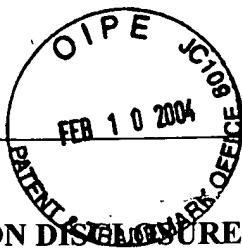
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| Substitute for form 1449B/PTO<br><br><b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><br><i>(use as many sheets as necessary)</i> |   | <b>Complete if Known</b> |                   |                        |                   |
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|   |   | Filing Date              | November 12, 2003 |                        |                   |
|   |   | First Named Inventor     | Charles R. Rapier |                        |                   |
|   |   | Group Art Unit           |                   |                        |                   |
| Examiner Name   |   |                          |                   |                        |                   |
| Sheet   | 3 | of                       | 4                 | Attorney Docket Number | 1856-42801(40183) |

| OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS |                       |  |                |
|---|-----------------------|--|----------------|
| Examiner Initials*                                | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate) title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issued number(s), publisher, city and/or country where published. | T <sup>2</sup> |
|   | AY                    | Liu et al., <i>Partial Oxidation of Methane over Nickel Catalysts Supported on Various Aluminas</i> , Korean Journal of Chemical Engineering 19 (5) pp. 735-741 (2002)   |                |
|   | AZ                    | Liu et al., <i>Partial Oxidation of Methane over Ni/Ce-ZrO<sub>2</sub>/0-Al<sub>2</sub>O<sub>3</sub></i> , Korean Journal of Chemical Engineering 19(5) pp. 742-748 (2002)   |                |
|   | BA                    | Machida et al., <i>Effect of Additives on the Surface Area of Oxide Supports for Catalytic Combustion</i> , Journal of Catalysts 103 (1987) pp. 385-393  |                |
|   | BB                    | Machida et al., <i>Analytical Electron Microscope Analysis of the Formation of BaO – 6Al<sub>2</sub>O<sub>3</sub></i> , Journal of American Ceramic Society 71[12] pp. 1142-47 (1988)  |                |
|   | BC                    | Machida et al., <i>Effect of Structural Modification on the Catalytic Property of Mn-Substituted Hexaaluminates</i> , Journal of Catalysis 123 (1990) pp. 477-785  |                |
|   | BD                    | Matsuda et al., <i>8th International Congress on Catalysis Volume IV: Impact of Surface Science on Catalysis Structure-Selectivity/Activity Correlations New Routes for Catalyst Synthesis (pp. IV-879-889)</i>  |                |
|   | BE                    | Miao et al., <i>Partial Oxidation of Methane to Syngas over Nickel-Based Catalysts Modified by Alkali Metal Oxide and Rare Earth Metal Oxide</i> , Applied Catalysts A: General 154 (1997) pp. 17-27   |                |
|   | BF                    | Nair et al., <i>Pore Structure Evolution of Lanthana-Alumina Systems Prepared through Coprecipitation</i> , Journal of American Ceramic Society 83[8] (2000) pp. 1942-1946   |                |
|   | BG                    | Oudet et al., <i>Thermal Stabilization of Transition Alumina by Structural Coherence with LnAlO<sub>3</sub> (Ln = La, Pr, Nd)</i> , Journal of Catalysis 114, (1998) pp. 112-120   |                |
|   | BH                    | Rahkeev et al., <i>Transition Metal Atoms on Different Alumina Phases: The Role of Subsurfaces Sites on Catalytic Activity</i> , Physical Review B 67, 115414 (2003) pg. 4   |                |
|   | BI                    | Rietveld, <i>A Profile Refinement Method for Nuclear and Magnetic Structures</i> , Journal of Appl. Cryst. (1969) 2, pp. 65-71   |                |
|   | BJ                    | Roh et al., <i>Partial Oxidation of Methane over Ni/0-Al<sub>2</sub>O<sub>3</sub> Catalysts</i> , Chemistry Letters 2001 (pp. 666-667)   |                |
|   | BK                    | Santos et al., <i>Standard Transition Aluminas, Electron Microscopy Studies</i> , Materials Research, Vol. 3 No. 4 (2000) pp. 104-114  |                |
|   | BL                    | Schaper et al., <i>The Influence of Lanthanum Oxide on the Thermal Stability of Gamma Alumina Catalyst Supports</i> , Applied Catalysis 7 (1983) pp. 211-220   |                |
|   | AM                    | Schaper et al., <i>Thermal Stabilization of High Surface Area Alumina</i> , Solid State Ionics 16 (1985) pp. 261-266   |                |
|   | AN                    | Seo et al., <i>Experimental and Numerical Studies on Combustion Characteristics of a Catalytically Stabilized Combustor</i> , Catalysis Today 59 (2000) pp. 75-86  |                |

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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**Complete if Known**

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| Application Number     | 10/706,645        |
| Filing Date            | November 12, 2003 |
| First Named Inventor   | Charles R. Rapier |
| Group Art Unit         |                   |
| Examiner Name          |                   |
| Attorney Docket Number | 1856-42801(40183) |

Sheet 4 of 4

**OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS**

| Examiner<br>Initials* | Cite<br>No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate) title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issued number(s), publisher, city and/or country where published. | T <sup>2</sup> |
|-----------------------|--------------------------|--|----------------|
|                       | BO                       | Russell et al., <i>Thermal Transformations of Aluminas and Alumina Hydrates</i> , Industrial and Engineering Chemistry Vol. 42, No. 7 (1950) pp. 1398-1403   |                |
|                       | BP                       | Subramanian et al., <i>Characterization of Lanthana/Alumina Composite Oxides</i> , Journal of Molecular Catalysts, 69 (1991) pp. 235-245   |                |
|                       | BQ                       | Taylor, <i>Computer Programs for Standardless Quantitative Analysis of Minerals Using the Full Powder Diffraction Profile</i> , Powder Diffraction, Vol. 6, No. 1 (1991) pp. 2-9   |                |
|                       | BR                       | Tietz et al., <i>Investigations on Lanthanide-ion-exchanged <math>\beta</math> and <math>\beta'</math>-Alumina</i> , Journal of Alloys and Compounds, 192 (1993) pp. 78-80   |                |
|                       | BS                       | Tijburg et al., <i>Application of Lanthanum to Psuedo-Boehmite and <math>\gamma</math>-Al<sub>2</sub>O<sub>3</sub></i> , Chapman and Hall (1991) pp. 6479-6486   |                |
|                       | BT                       | Weng et al., <i>Mechanistic Study of Partial Oxidation of Methane to Syngas Using In Situ Time-Resolved FTIR and Microprobe Raman Spectroscopies</i> , The Chemical Record Vol. 2, pp. 102-113 (2002)  |                |
|                       | BU                       | Wu et al., <i>Coupled Thermodynamic-Phase Diagram Assessment of the Rare Earth Oxide-Aluminium Oxide Binary Systems</i> , Journal of Alloys and Compounds, 179 (1992) pp. 259-287  |                |
|                       | BV                       | Zhou et al., <i>Structures and Transformation Mechanisms of the <math>n</math>, <math>\gamma</math> and <math>\theta</math> Transition Aluminas</i> , International Union of Crystallography (1991) pp. 617-630  |                |
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